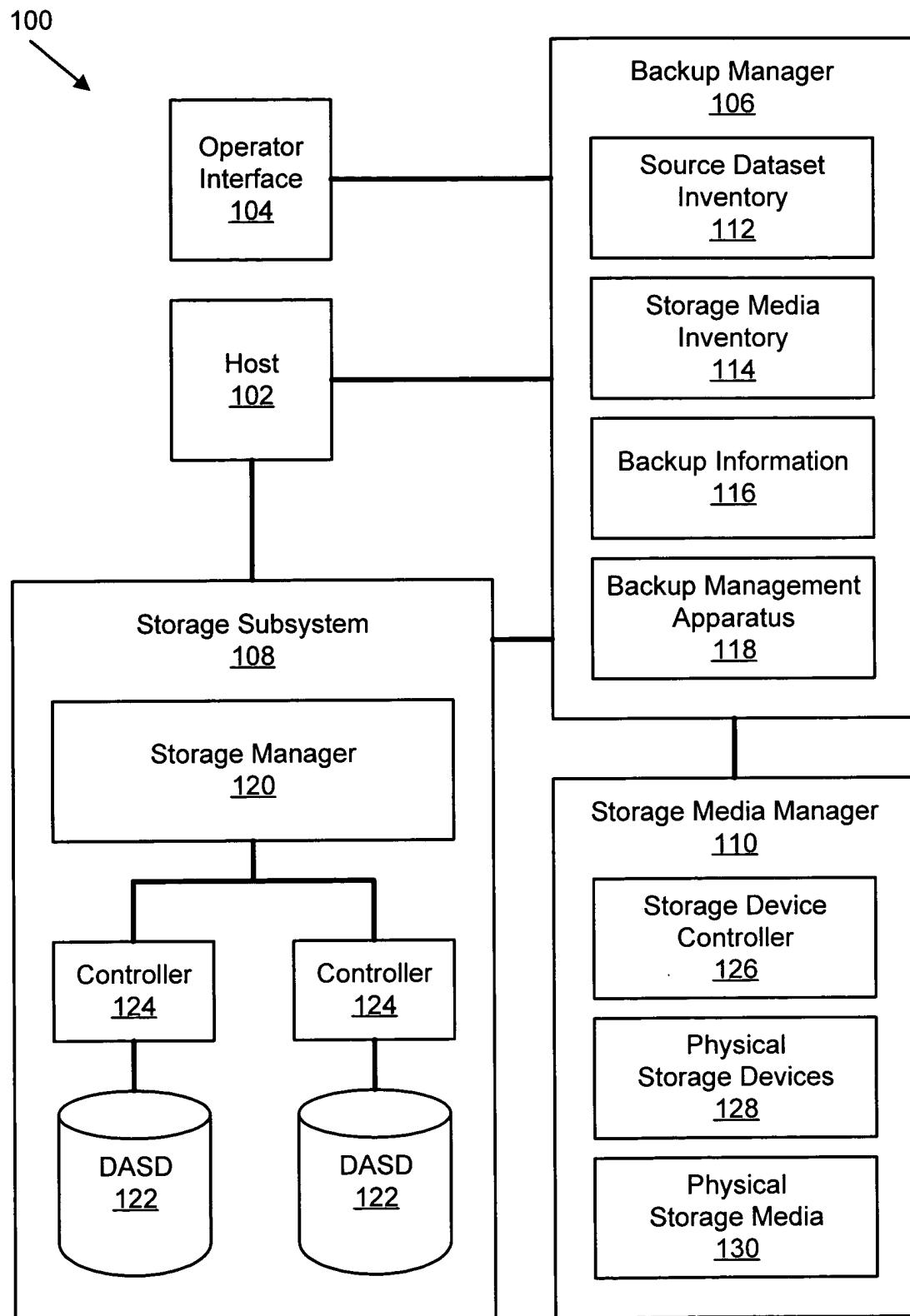APPARATUS, SYSTEM, AND METHOD FOR MANAGING MULTIPLE COPY VERSIONS
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Operator Interface 104

Host 102

Backup Manager 106

Source Dataset Inventory 112

Storage Media Inventory 114

Backup Information 116

Backup Management Apparatus 118

Storage Subsystem 108

Storage Manager 120

Controller 124

Controller 124

DASD 122

DASD 122

Storage Media Manager 110

Storage Device Controller 126

Physical Storage Devices 128
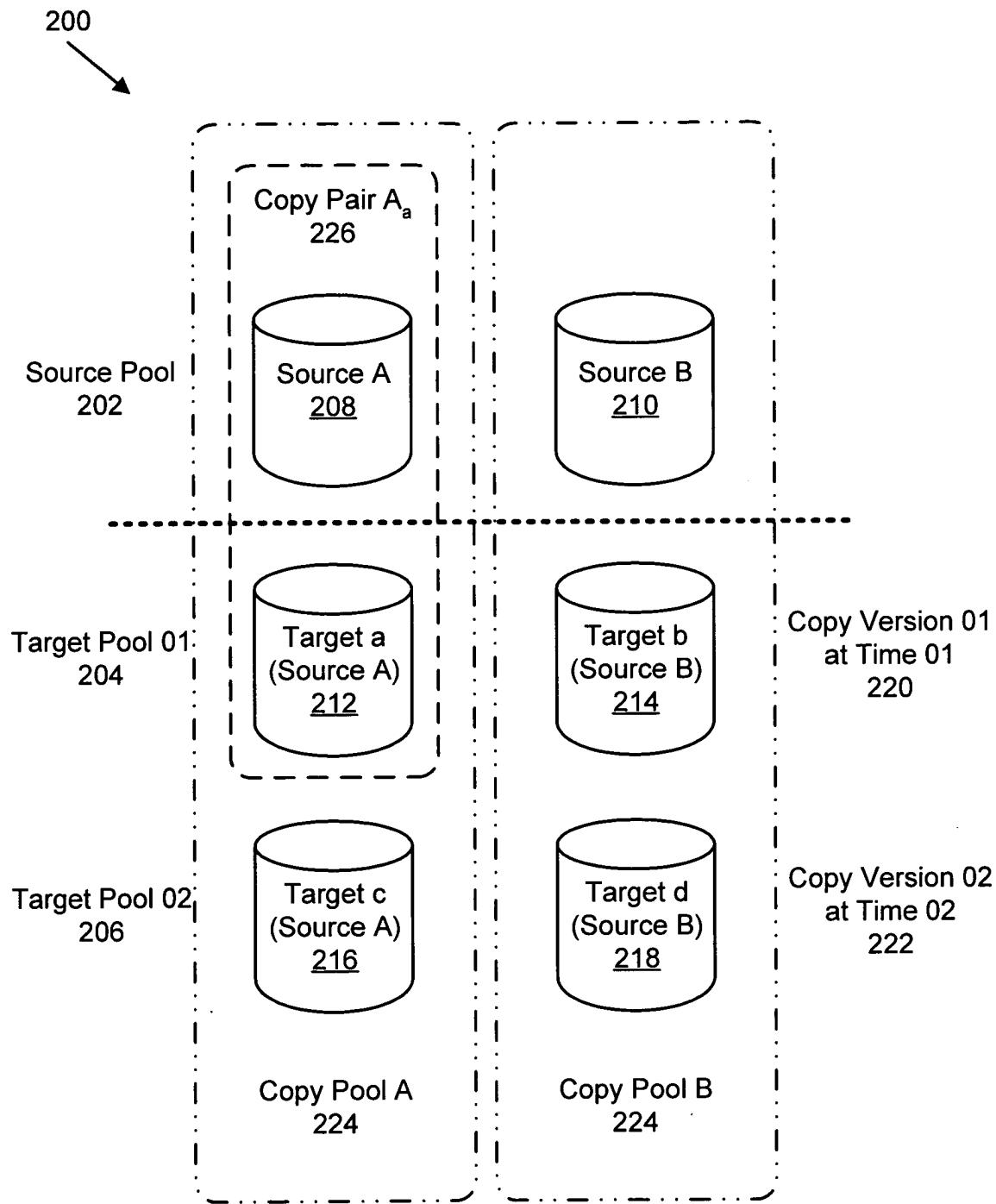
Physical Storage Media 130

FIG. 1

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200

Source Pool
202

Copy Pair A$_a$
226

Source A
208

Source B
210

Target Pool 01
204

Target a
(Source A)
212

Target b
(Source B)
214

Copy Version 01
at Time 01
220

Target Pool 02
206

Target c
(Source A)
216

Target d
(Source B)
218

Copy Version 02
at Time 02
222

Copy Pool A
224

Copy Pool B
224

FIG. 2

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Backup Manager
300

Source Dataset
Inventory
302

Storage Media Inventory
304

Backup Information
306

Volume Inventory
310

Volume Pool
Directory
312

Backup Dataset
Inventory
314

Alternative Backup
Dataset Inventory
316

Replication Records
318

Pre-Pairing Records
320

Backup Management Apparatus
308

Pre-Pairing Module
322

Record Management
Module
328

Pre-Pairing Record
Management Module
330

Replication Module
324

Replication Record
Management Module
332

Target Selection
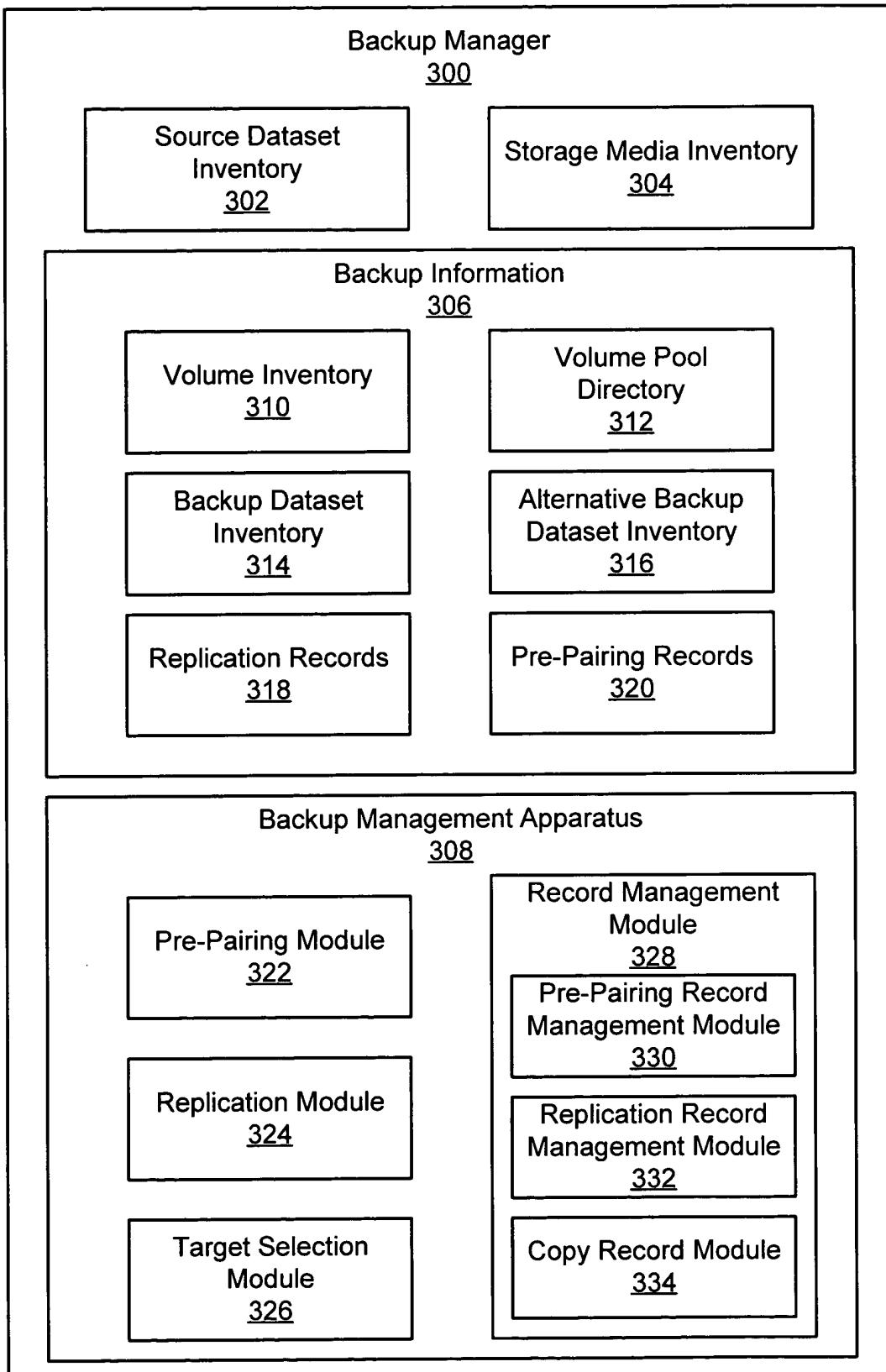Module
326

Copy Record Module
334

FIG. 3

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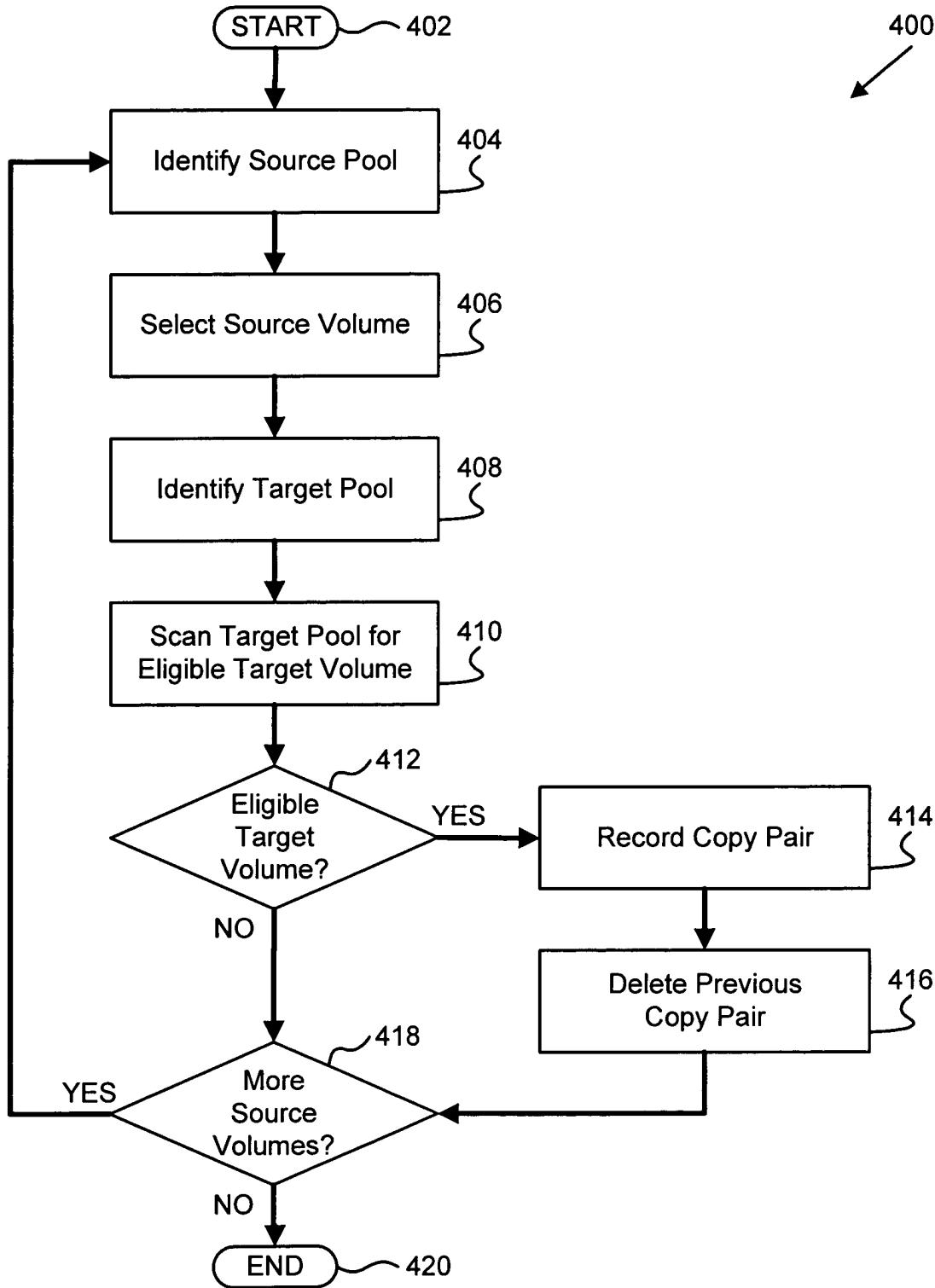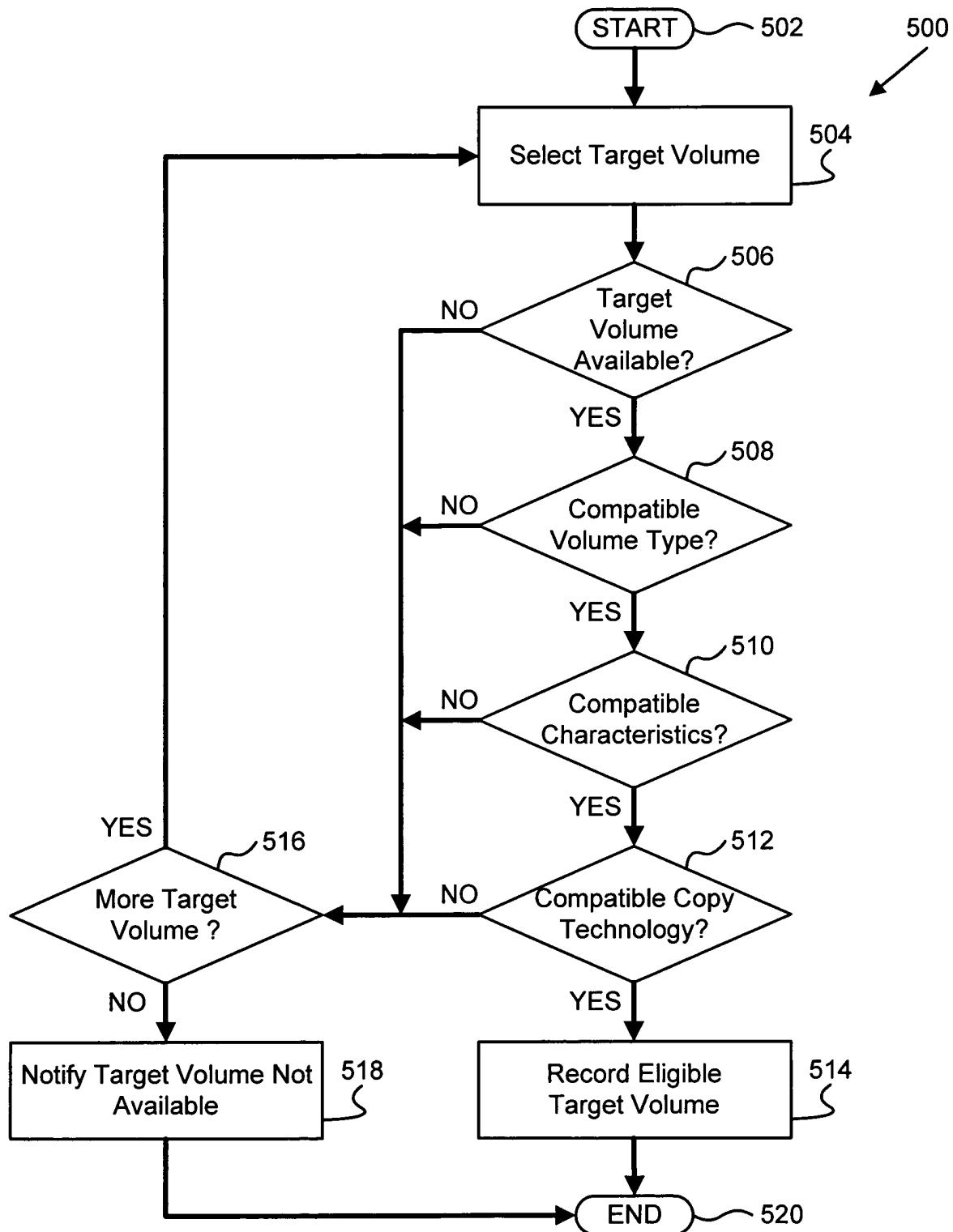Kunzler & Associates Docket No.: 1200.2.110

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```
                    ( START )  ~402                        400

                         │
                         ▼
              ┌──────────────────────┐  404
              │  Identify Source Pool │
              └──────────────────────┘
                         │
                         ▼
              ┌──────────────────────┐  406
              │  Select Source Volume │
              └──────────────────────┘
                         │
                         ▼
              ┌──────────────────────┐  408
              │  Identify Target Pool │
              └──────────────────────┘
                         │
                         ▼
              ┌──────────────────────┐  410
              │  Scan Target Pool for │
              │ Eligible Target Volume│
              └──────────────────────┘
                         │
                         ▼
                       412
                     ◇ Eligible ◇   YES    ┌──────────────────┐  414
                     ◇  Target  ◇─────────▶│ Record Copy Pair │
                     ◇ Volume?  ◇          └──────────────────┘
                         │                          │
                        NO                          ▼
                         │                 ┌──────────────────┐  416
                         │                 │ Delete Previous  │
                         │                 │   Copy Pair      │
                         │                 └──────────────────┘
                         ▼                          │
                       418                          │
          YES      ◇   More    ◇                    │
      ◀────────────◇  Source   ◇◀───────────────────┘
                   ◇ Volumes?  ◇
                         │
                        NO
                         │
                         ▼
                    (  END  )  ~420
```

FIG. 4

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FIG. 5

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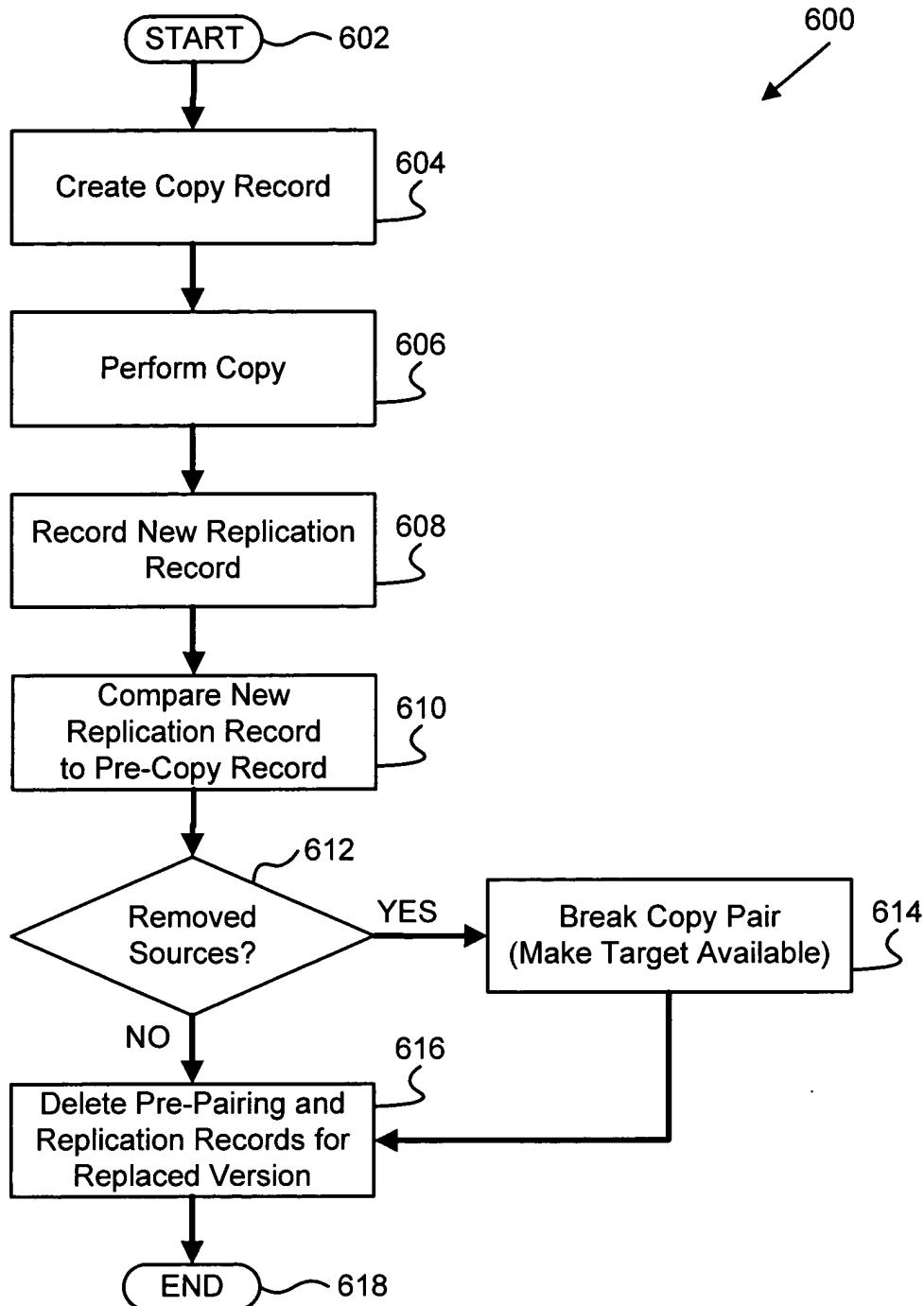Kunzler & Associates Docket No.: 1200.2.110

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START — 602

600

Create Copy Record — 604

Perform Copy — 606

Record New Replication Record — 608

Compare New Replication Record to Pre-Copy Record — 610

Removed Sources? — 612

YES → Break Copy Pair (Make Target Available) — 614

NO

Delete Pre-Pairing and Replication Records for Replaced Version — 616

END — 618

FIG. 6

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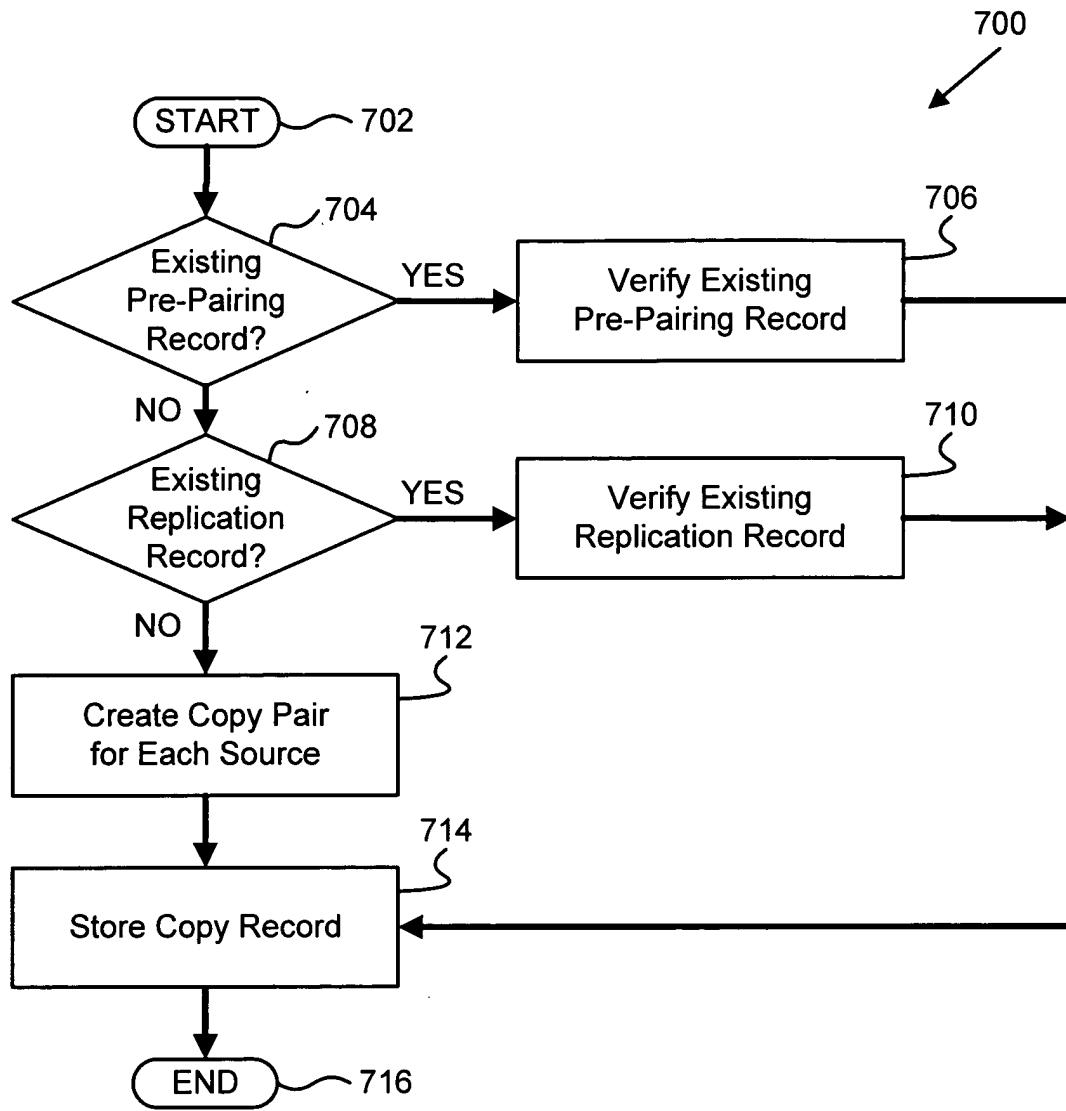Kunzler & Associates Docket No.: 1200.2.110

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700

START — 702

704

Existing
Pre-Pairing
Record?

YES → Verify Existing
Pre-Pairing Record — 706

NO ↓

708

Existing
Replication
Record?

YES → Verify Existing
Replication Record — 710

NO ↓

Create Copy Pair
for Each Source — 712

↓

Store Copy Record — 714

↓

END — 716

FIG. 7

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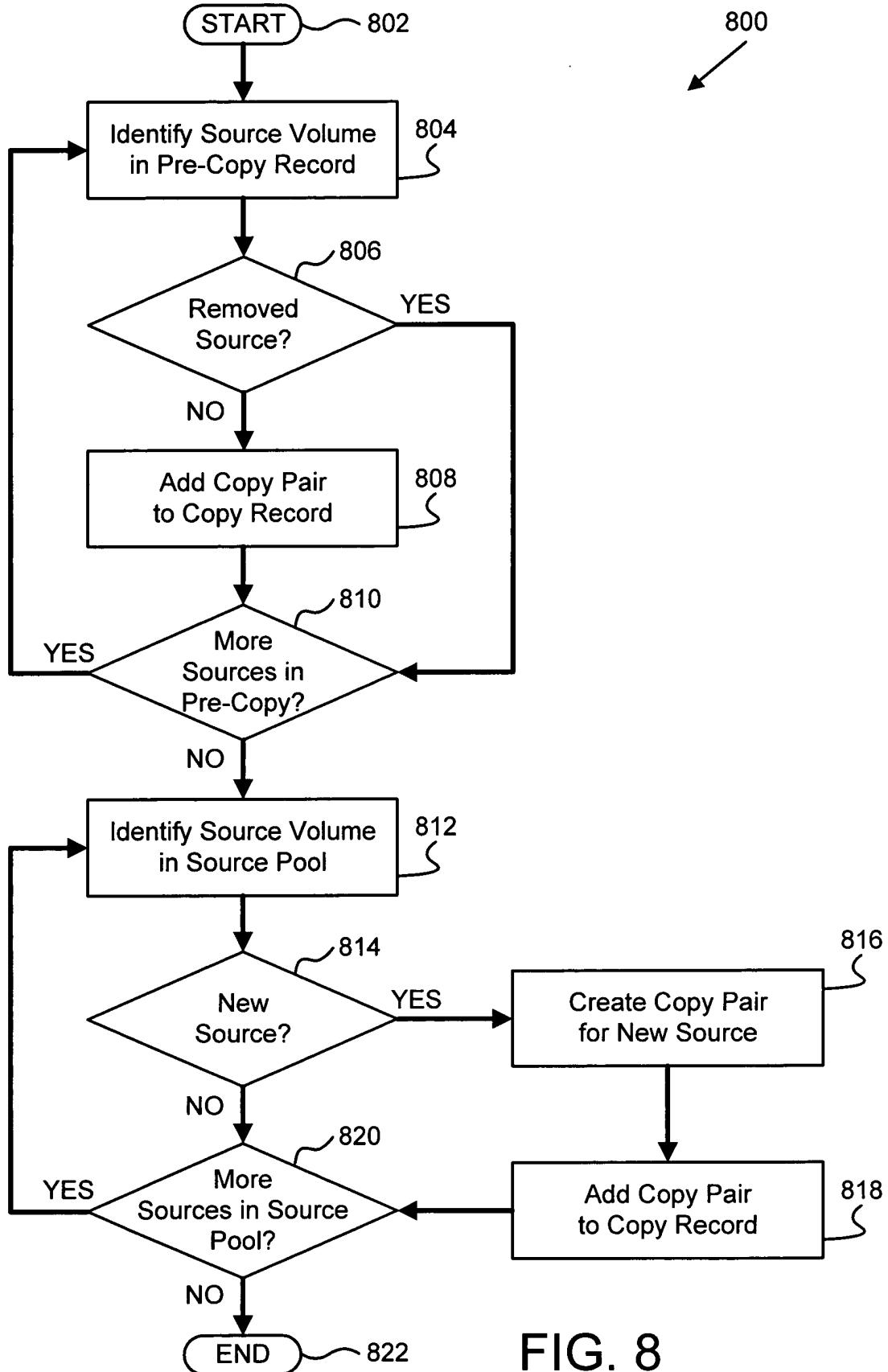Kunzler & Associates Docket No.: 1200.2.110

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FIG. 8